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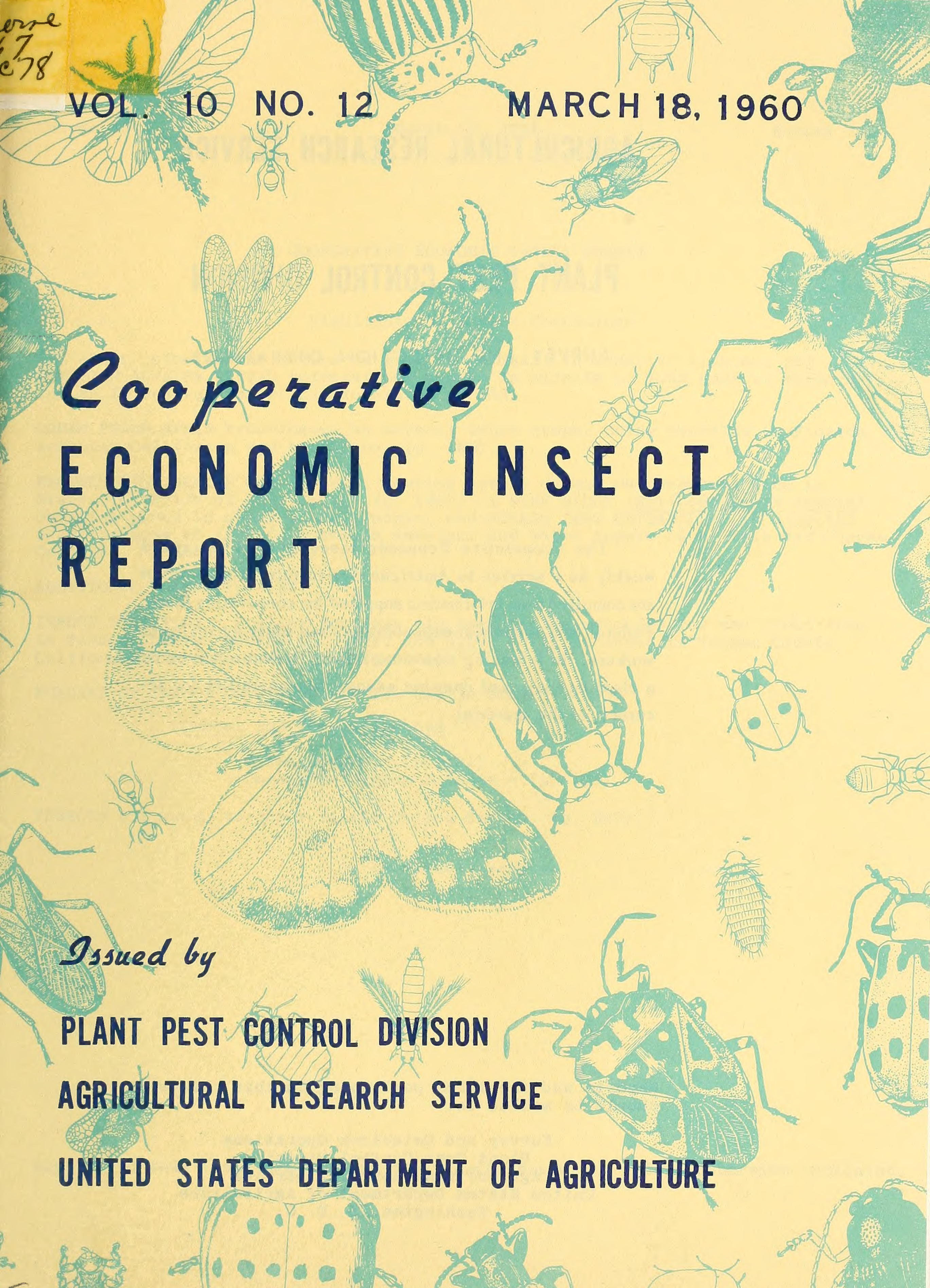

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 10 March 18, 1960 Number 12

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

PEA APHID infestations medium to heavy on alfalfa in areas of Arizona; and EGYPTIAN ALFALFA WEEVIL infestations medium in alfalfa on Yuma Mesa in Arizona and in El Centro area of California. (p. 183).

GREEN PEACH APHID troublesome on several truck crops; being reported in Florida, Arizona, California and Louisiana. (p. 185).

WESTERN PINE BEETLE and *Ips* spp. causing severe damage on ponderosa pine in Sierra foothills of California. (p. 185). A PINE MIDGE (*Retinodiplosis inopis*) damaging pines in areas of California; and FOREST TENT CATERPILLAR is expected to be serious in 1960 on American sweetgum and water tupelo in Baldwin and Clarke Counties, Alabama. (p. 186).

ADDITIONAL NOTES. (p. 189).

INSECT DETECTION: Smaller European elm bark beetle recorded for the first time in Washoe County, Nevada (p. 187); and olive scale recorded in Tehama County, California, for the first time (p. 184).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1959

Cereal and Forage Insects

Grasshoppers - (p. 191).
Corn and Sorghum Insects - (p. 195).

INSECTS not known to occur in the United States. (p. 207).

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Reports in this issue are for the week ending March 11, unless otherwise indicated.

WEATHER OF THE WEEK ENDING MARCH 14

Record late season cold weather persisted from the Great Plains to the Atlantic coast this week. Weekly temperature departures were much below normal over all sections of the Nation, except small areas of northern New England and southern Texas, and from the Pacific coast through the Plateau States to the central and southern Rocky Mountains and extreme western Great Plains.

Weekly average temperatures more than 15° below normal were recorded in the large area from the Dakotas and Kansas to New Jersey and Georgia, as extremely cold air covered this region for the fourth or fifth consecutive week. Record low temperatures for so late in the winter were reported from Michigan, Indiana, Kentucky, the Virginias, and the Carolinas, and low temperature records for specific dates were set at numerous stations in several other adjacent states. Minimum temperatures have been below freezing every day in March as far south as North Carolina, and freezing temperatures extended southward to scattered areas near Lake Okeechobee in Florida early in the week. In contrast, average temperatures were much above normal from Arizona and southern Nevada to extreme western Texas, with maxima reaching above 80° on most days.

Along the Pacific coast substantial precipitation fell as far south as northern California with heavy rains along the coast late in the week following earlier rain and snow. Precipitation in the central and northern Plateau States was generally light to moderate with some locally heavy snows in the mountains slowly reducing the moisture deficit. Moderate to heavy precipitation, generally falling as snow, extended from the central Missouri Valley southeastward to the Ohio and central Mississippi Valleys and portions of the Southeastern States. The heaviest March snow of record for Kentucky left 14 to over 20 inches of new snow in southern sections, 12 to 16 inches in the central portion, and 4 to 8 inches in the north, while parts of Tennessee received 10 inches or more; an average of 13 inches fell in southern Indiana, and several inches of new snow fell in western North Carolina and Virginia where unofficial totals of near 3 feet of snow have been reported this month, isolating several communities. Frequent snowfall in the central Great Plains and Mississippi Valley brought weekly totals of over 10 inches to scattered areas from South Dakota and Iowa to Kansas and Missouri. Snow extended southward to Arkansas, northern Georgia, and South Carolina and eastward into the Middle Atlantic States, with 3 to 14 inches of new snow in Maryland and 2 to 4 inches in southwestern Pennsylvania and Ohio. New York recorded the lowest weekly precipitation since the last week in December and precipitation was very light in New England, except for moderate to heavy snow in central and eastern Maine. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - LOUISIANA - Populations not large enough to obtain counts per foot in 4 fields of oats in East Baton Rouge Parish. However, counts ranged 0-3 per 10 sweeps with an average of less than 1 per 10 sweeps. (Spink). OKLAHOMA - Light to medium infestations continue to be noted in southeastern and south central areas. Counts averaged 80 per square foot in field of volunteer oats in Choctaw County. (Goin). Counts ranged 1.5-80 per linear foot (averaged 22 per linear foot) in 5 of 6 fields of small grain in the south central area. (Vinson). None noted in 3 fields of small grain checked in Blair area of Jackson County. (Presgrove). Populations remain relatively unchanged in infested fields in Payne County despite persistent inclement weather during past 2 weeks. (VanCleave).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Infestations medium and increasing in central and southwestern area barley. (Ariz. Coop. Sur.). OKLAHOMA - Counts averaged 2.5, 2.5 and 3 per linear foot in 3 fields of oats in south central area. (Vinson). Medium infestation (50 per linear foot) noted in a field of oats in Tillman County. (Hatfield).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Populations, although light, were apparently unaffected in the State despite inclement weather during the past 2 weeks. Counts ranged from 0.5-15 per linear foot (averaged 5.6 per linear foot) in 4 of 6 fields of small grain checked in the south central area. (Vinson). Counts continued at approximately the same level as those recorded 2 weeks ago in a wheat field checked in Payne County. (VanCleave). None noted in 3 fields of small grain checked in Jackson County. (Presgrove).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Counts averaged 2 per linear foot in a wheat field in Marshall County. (Vinson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light to moderate infestations in alfalfa in southern Eddy County. (N. M. Coop. Rpt.). OKLAHOMA - Populations continued at a noneconomic level in 3 alfalfa fields checked in Choctaw County. (Goin). None noted in alfalfa field checked in Jackson County. (Presgrove).

PEA APHID (Macrosiphum pisi) - ARIZONA - Infestations medium to heavy in Yuma County alfalfa and medium in some central Arizona fields. (Ariz. Coop. Sur.). OKLAHOMA - Light populations (less than 5 per square foot) continued to be noted in 3 alfalfa fields checked in Choctaw County. (Goin). None noted in alfalfa field checked in Jackson County. (Presgrove).

ALFALFA WEEVIL (Hypera postica) - COLORADO - None found as of March 10. (Colo. Ins. Sur.).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Medium to heavy infestations damaging alfalfa on the Yuma Mesa in Yuma County. Counts of larvae and adults average 3 to 4 per sweep. (Ariz. Coop. Sur.). CALIFORNIA - General heavy infestations on alfalfa in the El Centro area, Imperial County. (G. D. Peterson).

CLOVER LEAF WEEVIL (Hypera punctata) - CALIFORNIA - Light infestations in alfalfa in Chico, Butte County. (Cal. Coop. Rpt.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - LOUISIANA - Averaged 10 adults per 100 sweeps in clover in St. John the Baptist Parish. (Spink).

CLOVER MITE (*Bryobia praetiosa*) - ARIZONA - Heavy infestations present in some Yuma County alfalfa fields, particularly on the Yuma Mesa. (Ariz. Coop. Sur.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - FLORIDA - Surveys of 113 sites in Manatee, Sarasota and Sumter Counties in the central area during February were negative. (Fla. Coop. Rpt.).

FRUIT INSECTS

APHIDS - UTAH - Eggs extremely numerous in home orchards at Corinne and moderately numerous near Brigham City on apples, Box Elder County. (Knowlton). NEW MEXICO - *Eriosoma lanigerum* heavy on apple trees at Mimbres, Grant County. (N. M. Coop. Rpt.). COLORADO - Eggs of *Myzus persicae* ranged 0-2 per 100 buds on peach trees. (Colo. Ins. Sur.).

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Heavy infestation on avocado trees in Reedly, Fresno County. (Cal. Coop. Rpt.).

OLIVE SCALE (*Parlatoria oleae*) - Heavy infestation on prune trees in Richfield; the first record in Tehama County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - TEXAS - Light infestations reported in Erath County. (Garner).

A FRUIT TREE MITE (*Bryobia rubrioculus*) - NEW MEXICO - Eggs very abundant on underside of branches of apple trees along Mimbres River in Grant County. (N. M. Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - TEXAS - Heavy infestations pupating in pecan shucks in Coryell County. (Garner).

Citrus Insect Situation in Florida - End of February - PURPLE SCALE (*Lepidosaphes beckii*) activity and populations are very low throughout the State and will continue to be low through March. FLORIDA RED SCALE (*Chrysomphalus aonidum*) activity is holding at a low level and will remain in the low range through March. Populations will increase in April but will generally be below normal during the spring. All districts are below average in activity at the present time. CITRUS RED MITE (*Panonychus citri*) - February rains have been a factor in keeping activity at a low level. Although an increase is expected the latter part of March, populations generally will continue below average during March and April. All districts have a few groves where mites are abundant. Moderate activity is present in the Bartow, upper east coast and Brooksville districts. CITRUS RUST MITE (*Phyllocoptruta oleivora*) activity dropped out of the high range during the last week of February but is still well above average for this time of year. A gradual decrease is expected during March. Highest activity is in the Bartow, west coast and Ridge districts. Groves should be checked in all districts and controls applied where rust mites are numerous. TEXAS CITRUS MITE (*Eutetranychus banksi*) is present in 18 percent of groves checked. Less than one percent have heavy infestations. SIX-SPOTTED MITE (*Eotetranychus sexmaculatus*) has been observed in 9 percent of the groves, which is near the average percentage for this time of year. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

FRUIT FLIES - FLORIDA - During the month of February, 7,572 combination and 463 MEXICAN FRUIT FLY (*Anastrepha ludens*) traps were in operation in 45 counties in Florida. No specimens of fruit flies of economic importance were trapped during the month. One specimen of MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) was caught aboard a ship while in the port of Tampa on January 29, by Plant Quarantine Division, ARS, personnel. Fruit fly trapping was intensified in this particular area as soon as advised of the positive find. (Fla. Coop. Rpt.).

ROSE SCALE (*Aulacaspis rosae*) - CALIFORNIA - Medium infestation of berry vines in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

TRUCK CROP INSECTS

GREEN PEACH APHID (Myzus persicae) - FLORIDA - Populations have been abundant this season on potatoes in south Dade County. They were more abundant over a shorter period of time in 1959, perhaps. They seem fewer this season but linger longer. (Wolfenbarger, Mar. 3). ARIZONA - Infestations becoming heavy in central area sugar beets. Light infestations also present on lettuce statewide and large numbers of winged forms in the air in all areas. Sticky-board collections during the period February 29 to March 7 at various locals were as follows: Mesa - 69; Kyrene - 39; Waddell - 3; Glendale - 49; Deer Valley - 39. (Ariz. Coop. Sur.). CALIFORNIA - Low populations on sugar beets and spinach in Yolo County. Growers treating border rows of spinach adjacent to sugar beet plantings. (V. Stombler, Cal. Pac.). Severe on sugar beets in El Centro area, Imperial County. (G. D. Peterson). LOUISIANA - Light to moderate infestations occurred on collards in St. John the Baptist Parish. (Spink).

APHIDS - ALABAMA - Damage to turnips heavy in Mobile County during February. Species probably Pemphigus populi-transversus. (Lockhart, Seibels). LOUISIANA - Light to moderate infestations of Rhopalosiphum pseudobrassicae occurred on turnips in St. John the Baptist Parish. The turnips were in process of being harvested. (Spink). CALIFORNIA - Building up on strawberries sufficiently to require controls; principally Pentatrichopus fragaefolii. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - CALIFORNIA - Infestations serious in Orange County, especially in strawberry fields planted in August of 1959. Plantings made in November and December 1959 are still free of mites. (R. E. Campbell).

A MITE (Tyrophagus dimidiatus) - CALIFORNIA - Light populations now occurring in scattered areas in many fields of spinach. This mite built up to damaging populations in 1959 on spinach in the Delta region. (V. Stombler, Cal. Pac.).

A SPIDER MITE (Tetranychus cinnabarinus) - ARIZONA - Light infestations present on sugar beets in central area and on young tomatoes in Yuma County. (Ariz. Coop. Sur.).

A LEAF ROLLER (Platynota stultana) - ARIZONA - Light to medium infestations of larvae and adults present in some central area sugar beet fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - FLORIDA - Present on potatoes, cabbage and other crops in south Dade County. (Wolfenbarger, Mar. 3). LOUISIANA - A field of new cabbage in St. John the Baptist Parish appeared to be in excellent condition. No insects found and less than 1 percent of plants showed insect damage. (Spink).

A SERPENTINE LEAF MINER (Liriomyza sp.) - FLORIDA - Infestations present on potatoes, tomatoes, etc., at Homestead, Dade County. This species has been about as abundant as usual. They appear to be dying out now, due perhaps to enemies. (Wolfenbarger, Mar. 3).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - ALABAMA - Damage to turnips severe in Mobile County during February. (Lockhart, Seibels).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - This species and Ips spp. are causing severe damage in 6 specific outbreaks in Nevada, El Dorado and Placer Counties on ponderosa pine in the Sierra foothills. Groups up to 25 completely killed and many such groups scattered through the areas. (Placer Ranger Unit, D. Dotta, H. Meyer).

CALIFORNIA FIVE-SPINED IPS (*Ips confusus*) - CALIFORNIA - Causing between 2-4 percent mortality of Coulter pine crowns in the Trobuco Canyon area along Indian Canyon Ridge in Orange County. (Cal. Coop. Rpt.).

BARK BEETLES - ARKANSAS - The destructive ice storm which occurred across the southern half of the State can result in a potentially dangerous situation when *Ips* spp. and *Dendroctonus terebrans* activity begins. Some *D. terebrans* activity has been reported and an increase in activity may be expected in roots and stumps of severely damaged trees. (Ark. For. Pest Rpt., Mar. Rpt.).

BLACK PINE LEAF SCALE (*Aspidiotus californicus*) - CALIFORNIA - Severely damaging single trees in one township in Yola Bolla district of Shasta County. This species was active in several districts in 1959 and became quite severe to the extent that some trees were killed outright. (C. Lewis).

AN APHID (*Cinara ponderosae*) - CALIFORNIA - Heavy population occurring on pine trees on a property in Porterville, Tulare County. (Cal. Coop. Rpt.).

DOUGLAS-FIR TWIG WEEVIL (*Cylindrocopturus furnissi*) - CALIFORNIA - Young Douglas-fir in a 12-acre Christmas tree planting in Sonoma County showing top kill and flagging. (W. D. Shaw).

A PINE MIDGE (*Retinodiplosis inopis*) - CALIFORNIA - Causing considerable terminal kill on pine trees in the Prairie area in Jackson State Forest and Mendocino County. (Cal. Coop. Rpt.).

FLATHEADED BORERS - CALIFORNIA - Heavy larval infestations of *Chrysobothris* sp., probably *C.texana*, on Arizona cypress in Middletown, Lake County, and *Chrysobothris* sp. larvae heavy in mountain ash in Chico, Butte County. (Cal. Coop. Rpt.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - ALABAMA - Egg surveys in Baldwin and Clarke Counties on February 8 and 9 showed 10 or more egg clusters per top in large trees of American sweetgum and water tupelo in the S. Carlton oil field area on the Alabama River, north of Stockton on the Tensaw River and across from Fort Stoddard on the Mobile River. Complete defoliation is expected again in 1960. This is part of an area of 80,000 acres which was seriously defoliated in 1958 and 1959. Important growth losses have resulted. (Morris, So. For. Exp. Sta.).

A CLEAR WING MOTH (*Ramosia* sp.) - CALIFORNIA - Heavy larval infestation in oak tree bark in Santa Barbara, Santa Barbara County. Species probably *R. resplendens*. (Cal. Coop. Rpt.).

GROUND MEALYBUG (*Rhizoecus falcifer*) - CALIFORNIA - Heavy ground population in Aptos, Santa Cruz County; and *Rhizoecus* sp. heavy and infesting commercial African violets in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.).

GREEN SHIELD SCALE (*Pulvinaria psidii*) - TEXAS - Light infestation reported in a greenhouse in Tarrant County. (Garner).

AN ARMORED SCALE (*Parlatoria camelliae*) - CALIFORNIA - Heavy population on camellia in Corning, Tehama County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - OKLAHOMA - Medium infestation noted on some flowering quince checked in Stillwater. (Drew).

A POWDER POST BEETLE (*Trogoxylon prostomoides*) - CALIFORNIA - Heavy adult populations occurring on bamboo in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (*Calacarus adornatus*) - CALIFORNIA - Heavy populations occurred on camellia in Oroville, Butte County. (Cal. Coop. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEVADA - Specimens now emerging in the laboratory from elm collected in Reno, Washoe County, in the fall of 1959 are this species. This is the first record of ths species in Washoe County and the second in the State. The other known infestation is in Las Vegas, Clark County. (Bechtel, Lauderdale).

FALL WEBWORM (Hyphantria cunea) - OREGON - Adults are emerging and causing concern to home owners in the Salem area. An unusually heavy infestation of this insect in 1959 resulted in some caterpillars finding their way into homes, and apparently pupating there. (Larson).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Some cattle infested in Bear River City-Corinne area of Box Elder County; cattle rubbing devices common. Infestations severe in some Kane County ranch herds; moderate to severe in Duchesne and Uintah County herds; and cattle rubbing in some northern Davis County areas. (Knowlton).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Counts averaged 6 grubs per animal on 7 infested mature cows of 75 checked in a community sales barn in Bryan County. (Vinson).

CATTLE GRUBS (Hypoderma spp.) - NEVADA - Greatly reduced over previous years, with untreated animals averaging 1 or 2 per head. (Lauderdale).

SHEEP BOT FLY (Oestrus ovis) - TEXAS - Averaged 25 larvae in each sheep in a control experiment conducted at Texas Agricultural and Mechanical College on 5 sheep. (Galvin).

STORED-PRODUCT INSECTS

Stored-grain Insect Survey in Mobile County, Alabama - Survey was made at different intervals during February. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella), INDIAN-MEAL MOTH (Plodia interpunctella), RICE WEEVIL (Sitophilus oryza), FLOUR BEETLES, CADELLE (Tenebroides mauritanicus) and CIGARETTE BEETLE (Lasioderma serricorne) were common in all areas inspected. Large numbers of two unidentified specimens of BEAN WEEVILS were found in sacks of crushed alfalfa. SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis), a SPIDER BEETLE and BLACK CARPET BEETLE (Attagenus piceus) were also common. (Seibels, Lockhart, Wallace).

Stored-grain Insect Survey in Grant County, New Mexico - MEALWORMS (Tenebrio molitor and T. obscurus) were light to abundant in old stored grain and old sacks at several properties; CADELLE was light in several grain bins; GRANARY WEEVIL (Sitophilus granarius) was moderately heavy in 2 locations; and SAW-TOOTHED GRAIN BEETLE was light in one location. (N. M. Coop. Rpt.).

KHAPRA BEETLE (Trogoderma granarium) - FLORIDA - Twenty-two inspections were made in 10 counties, principally in the central area, by State Plant Board and PPC personnel in February. Six collections of grain insects were submitted for identification but all were negative. (Fla. Coop. Sur.).

DERMESTIDS (Trogoderma sternale, T. simplex) - CALIFORNIA - Eating honeycomb in Fresno, Fresno County; medium infestation. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

HYMENOPTEROUS PARASITES - OKLAHOMA - Found in very limited numbers in one field of oats in the south central area. (Vinson). None noted in remaining fields of small grains checked throughout the State. (Goin, Vinson, Hatfield, Presgrove, VanCleave).

PREDATORS - OKLAHOMA - None noted in fields of alfalfa and small grain checked in the State. (Goin, Vinson, Hatfield, Presgrove, VanCleave).

MISCELLANEOUS INSECTS

CLOVER MITE (*Bryobia praetiosa*) - CALIFORNIA - Heavy population invading a building and annoying people in Siskiyou, Siskiyou County. (Cal. Coop. Rpt.).

A POWDER POST BEETLE - OKLAHOMA - Infesting several new homes in the Payne County area. (Howell).

A PSYCHID (*Apterona crenulella*) - UTAH - Large numbers attached to walls and below cornices of houses in one area of North Logan, Cache County. (Knowlton).

BROWN-BANDED ROACH (*Supella supellectilium*) - UTAH - Quite common in Salt Lake City area and present at St. George. (Knowlton). IDAHO - Reported abundant in a home in Twin Falls. (Gibson).

CIGARETTE BEETLE (*Lasioderma serricorne*) - OKLAHOMA - Infesting several homes in the Payne County area. (Howell).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Total of 5,632 inspections for the period were made in 28 counties. Extensions were found in known infestations in most areas. Initial infestations identified during February involving new townships were found in the following previously infested counties: Gadsden, Manatee, Pasco and Seminole. (Fla. Coop. Sur.).

A WEB-SPINNER (*Oligotoma saundersii*) - FLORIDA - Adult and immature stages found at High Springs, Alachua County, on March 2 and March 8 by E. M. Collins, Jr. This is a very interesting record and the first State Plant Board record of an embiid infestation in a feed mill. This species feeds chiefly on dead and decaying vegetable matter. (H. V. Weems, Jr.).

A SCALE INSECT (*Aonidomytilus hyperici*) - FLORIDA - Found on St.Andrewscross (*Ascyrum hypericoides*) at Glen St. Mary, Baker County, on March 1 by E. W. Holder, Jr. This is the third State Plant Board record of this scale and is also a new host record. This scale was collected for the first time in Florida on *Hypericum* sp. in Macclenny, Baker County, in November 1922. The second collection was on *Hypericum* sp. at Monticello, Jefferson County, in December 1939. (Fla. Coop. Rpt.).

LIGHT TRAP COLLECTIONS

	Pseudaletia unipuncta	Feltia subterr.	Prodenia ornithog.	Agrotis ipsilon	Peridroma margaritosa
ARIZONA					
Mesa 2/22-28			20		1
Mesa 2/29-3/6			17		9
FLORIDA					
Gainesville 3/2		2	4	1	
Homestead 3/2		7			
Monticello 3/8	1	1			
Quincy 2/29	3	2			
LOUISIANA					
Baton Rouge 3/4-10	6				
SOUTH CAROLINA					
Charleston 2/29-3/6				1	1

ADDITIONAL NOTES

NEVADA - A medium infestation of POTATO APHID (Macrosiphum solanifolii) occurred on iris in Reno, Washoe County. (Bechtel, Lauderdale).

OREGON - A heavy infestation of SHALLOT APHID (Myzus ascalonicus) was found on sprouting tops and roots of onions in storage at Harbor, Curry County, on March 4. Previously, this aphid was observed on Easter lily and chickweed in the same general area. (Doucette).

GEORGIA - ALFALFA WEEVIL (Hypera postica) larvae infesting alfalfa at 1 to 3 per plant in Oconee County. One larva per plant on alfalfa in Hancock County. Alfalfa 2 inches high. VEGETABLE WEEVIL (Listroderes costirostris obliquus)and TOBACCO FLEA BEETLE (Epitrix hirtipennis) light to moderate on tobacco in the plant bed in Worth, Grady, Thomas, Brooks, Lowndes, Lanier, Atkinson, Ware, Wayne and Tattnall Counties. (Johnson).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES [1/]

1959

CEREAL AND FORAGE INSECTS

Grasshoppers: Generally in 1959, grasshoppers were far from the problem they were in 1958. However, there were some localized infestations in several of the states generally concerned with these pests that required either controls or at least surveillance for a period of time early in the season. Except for a small threatening area and a severe threatening area, grasshopper infestations were slight to noneconomic in Illinois. Infestations were noneconomic to light throughout Indiana and statewide grasshopper populations in Minnesota were generally the lowest since 1954. Populations in Wisconsin were not as high or as extensive as in 1958. Grasshopper infestations were noneconomic in North Dakota during 1959 although scattered threatening to severe populations developed in several counties. In South Dakota, grasshoppers were of economic importance by June 26 in many areas. Numbers were down in Montana during 1959 and several species infested less than two percent of reported crop-range acreage in Colorado. The State of Wyoming applied controls to some 230,000 acres in six counties.

Crop and range losses due to grasshoppers were estimated at $53,000 in Utah, while grasshoppers were a very serious problem on rangeland and cropland in eastern and northern counties of New Mexico. Although egg survival was high in eastern and southeastern rangeland areas of Arizona during the winter, weather conditions during the remainder of the year were not conducive to the development of outbreak populations. There was no grasshopper problem in Kansas during 1959. Heavy hatches from high numbers of egg pods that were present in the panhandle and central areas of Nebraska, along with ideal weather, indicated the necessity of a control program, which was initiated in three panhandle counties. The presence of only low nymphal numbers in June resulted in the cancellation of this program, however. Infestations in the eastern part of Nebraska were noneconomic. Grasshopper populations in Oklahoma were generally light, as predicted.

Grasshoppers were somewhat lower in Arkansas during 1959 than in 1958 and are not expected to be a problem in 1960, and in Texas infestations did not develop into a general outbreak. Grasshoppers were generally very low in Oregon, but discovery of an infestation in northern Baker County was too late for controls to be effective in 1959. Numbers were sufficiently heavy in this area to be a potential threat in the spring of 1960, however. Populations were far below economic levels in Nevada, and high numbers of one species were found in one parish in Louisiana and populations of another species were high in Vermont. For information on the grasshopper adult survey conducted in the fall of 1959, see the map following page 38 (CEIR 10(3):3-4-60). The distribution of HIGH PLAINS GRASSHOPPER (Dissosteira longipennis), based on the 1959 adult survey in New Mexico, Colorado, Oklahoma and Texas, is indicated in the map on page 194.

Grasshoppers were common throughout Illinois and abundant in some localized areas. The fall survey showed noneconomic populations in the extreme north sections and in the southern quarter of the State. Infestations were slight in the remainder of Illinois, except for a small area in Wabash and Edward Counties that had moderate populations and an area centered in Marshall County with abundant numbers. Populations were approximately 92 percent RED-LEGGED GRASSHOPPER (Melanoplus femur-rubrum). Melanoplus spp. caused light to moderate damage in marginal rows of a few corn fields and marginal rows of soybeans near hatching beds.

[1/] Including all reporting states except Hawaii and Alaska, which were carried in CEIR 10(4):46 and CEIR 10(6):74, respectively.

Infestations were noneconomic to light throughout Indiana, with crop damage only in extremely localized areas. Red-legged grasshopper was the principal species involved.

In Minnesota, cool spring weather delayed egg hatch of some species, particularly TWO-STRIPED GRASSHOPPER (*Melanoplus bivittatus*) and DIFFERENTIAL GRASSHOPPER (*M. differentialis*), while above normal, early summer temperatures accelerated egg hatch of red-legged grasshopper and a later hatch of the same species. Grasshopper egg hatch was completed by late June. Generally, statewide grasshopper populations were the lowest since 1954 in Minnesota. Economic infestations were present in a few fields in two small southwestern areas of the State and adult and egg surveys indicate that these areas may have threatening populations in 1960. Instances of economic infestations in some fields in other areas of Minnesota were very scattered and localized. An estimated 177,000 acres of a possible 6,663,000 hay and grassland acres were infested by sufficient grasshopper numbers to cause economic losses. Populations are expected to be light to noneconomic over the remainder of Minnesota in 1960, with no large areas of heavy or severe infestations anticipated. However, local concentrations may develop under favorable weather conditions even in areas of light populations.

In Wisconsin, first hatch of red-legged grasshopper began June 5-12 in Marquette County. Nymphal counts of 0-10 per sweep occurred in light soil areas in the central district in late June. Populations were as high as 30-40 nymphs per square yard, but decreased 30 percent in mid-August. This decrease was associated with rains and high humidity. Adult fall surveys showed highest grasshopper numbers to be concentrated in central Wisconsin, but populations were not as high or as extensive as in 1958.

Grasshopper infestations were noneconomic in North Dakota in 1959 although scattered threatening to severe cropland infestations developed in Divide, Burke, Renville and Pierce Counties; two-striped grasshopper was the dominant species, followed by red-legged grasshopper and MIGRATORY GRASSHOPPER (*M. bilituratus*). Controls were applied to an estimated 210,000 acres. Fall surveys showed the grasshopper infestation to be more widespread than in 1958. Light to moderate populations were present in croplands in eastern North Dakota, where there was little or no infestation in 1958. *M. femur-rubrum* and *M. bivittatus* were the dominant species in this area. A severe rangeland infestation developed in several areas of Golden Valley, Slope and Billings Counties in western North Dakota, with *Aulocara elliotti* the dominant species. Controls were applied to 12,352 acres in these counties through a cooperative program. The fall rangeland survey indicated possible continuous grasshopper troubles in western counties. Controls may be required on 78,000 acres of private range and 21,700 acres of Federal rangeland in 1960.

In South Dakota, two-striped grasshopper began hatching about mid-May in the southeast and west central areas, and *M. bilituratus* in the west central area. Hatches of differential and two-striped grasshoppers were heavy in margins and roadsides by the second week of June. *Melanoplus confusus* was noted in the Black Hills area the following week, when nymphs were not too numerous in Clark, Spink, Faulk, Edmunds and Brown Counties. By June 26, grasshoppers were of economic importance in many areas of South Dakota. Many acres of forest land were sprayed under a Federal program in the Black Hills area and there was a cooperative program in the range area adjacent to the northeast edge of the Black Hills, where there was a severe migratory grasshopper outbreak. The fall adult survey indicated many light to moderate populations, with scattered moderate to abundant populations in the north central, northwest and Black Hills areas of the State. Approximately 2,695,680 acres were involved.

Grasshopper numbers were down in Montana during 1959, with scattered infestations occurring in Rosebud, Big Horn, Cascade, Chouteau, Blaine, Phillips and Sanders Counties. Controls were probably applied to less than 95,000 acres; about 50,354 acres of this by a Federal program. The State of Wyoming applied controls for rangeland species to a total of 236,361 acres in Johnson, Park, Goshen, Sheridan, Hot Springs and Fremont Counties. Some controls were applied to cropland by owners. Several species of grasshoppers, including two-striped, migratory, red-legged and differential grasshoppers and *M. occidentalis* infested less than two percent of reported farm and ranch rangeland acreage in Colorado. Loss value was approximately $376,816; cost of control, $173,000; and the estimated saving was $683,350. Infestations of migratory, red-legged and differential grasshoppers in wheat were localized, with negligible damage in most areas. Migratory and differential grasshoppers infested alfalfa and red-legged grasshopper was present in barley. Infestations were localized in this crop and major loss was due to a combination of insects and weather.

Utah crop and range losses, due to grasshoppers, were estimated at $53,000; and controls carried out on croplands largely by owners, resulted in an estimated saving of $840,000. The most damaging species were migratory, two-striped, red-legged, Packard and clear-winged grasshoppers and *M. bruneri*, *M. borealis* and *Aulocara elliotti*. Federal spraying on forestlands controlled grasshoppers over an 89,104-acre area, protecting an estimated 173,000 acres in Sanpete and Utah Counties.

Grasshoppers were a very serious problem in New Mexico on rangeland and cropland in eastern and northern counties. Cooperative rangeland programs were carried out in areas of Roosevelt, Curry and Colfax Counties on a total of 275,383 acres, while a voluntary program on about 110,000 acres of cropland was also carried out in Curry County. Egg survival was high in eastern and southeastern rangeland areas of Arizona during the winter. Hatching began March 10-15, earlier than normal, because of low winter and early spring rainfall, which resulted in sparse growth of annual plants. Weather conditions during the remainder of the year were not conducive to development of outbreak populations.

In California, early indications of heavy to severe grasshopper infestations did not materialize later in the season. Heaviest populations occurred from the Tehachapi Mountains north and in local areas in San Diego County. Controls were applied to some 73,197 acres in 24 counties for grasshoppers in 1959 to protect adjacent croplands. A fungus, *Entomophthora grylli*, became active early in the season and was probably responsible for mass reduction of grasshopper populations.

Grasshopper egg hatch in Missouri began the first of May in the southeast and was prolonged by cool, wet weather in May and June. No economic populations developed, with scattered, light populations of migratory, red-legged, differential and two-striped grasshoppers being confined to wasteland, road ditches and fence rows. Kansas had no grasshopper problem during 1959, except in a few localized areas, and there were no cooperative control programs; only a small amount of individual control. Cool, dry weather shortly after the main hatch was probably instrumental in reducing populations to a very low level. The predominant crop species were red-legged, two-striped and migratory grasshoppers. Counts were generally of noneconomic importance, being in the moderate range only in a few western areas of the State during the adult summer survey.

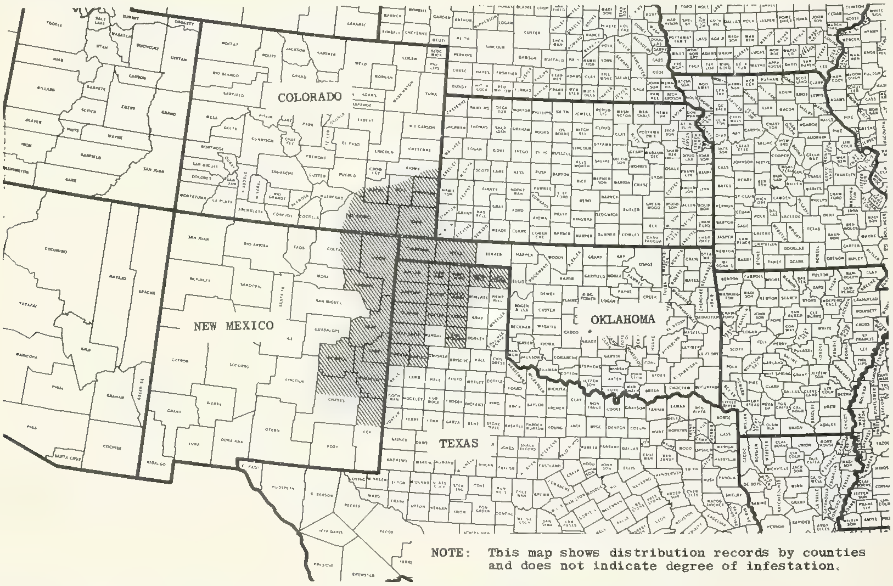
The 1958 fall egg survey in Nebraska revealed high numbers of egg pods in the panhandle and central portions of the State, which were under close surveillance during the spring of 1959. Heavy hatches, along with ideal weather conditions, indicated the necessity of a control program. Controls were initiated on 183,000 acres in Morrill, Garden and Cheyenne Counties, where counts ranged 100-300 nymphs per square yard. The dominant rangeland species were *Ageneotettix deorum*, *Boopedon nubilum*, *Aulocara elliotti* and *Phlibostroma quadrimaculatum*.

June surveys revealed only low numbers of nymphs remaining, probably due to the prevailing rain and snow over the general area during the week of May 18. The control program was thus cancelled. Development of cropland species in the central area of Nebraska was spotty, migratory and two-striped grasshoppers being dominant. Nymphs of these two species ranged 10-25 per square yard. Control by individuals was carried out wherever required. Infestations in eastern Nebraska were light and noneconomic.

As predicted, grasshopper populations in Oklahoma were generally light, with only localized infestations causing damage or concern. Populations were heavy only in isolated west central and northwestern localities, mainly on idle or soil bank land. Controls were applied in a few instances to crops in these areas, but no cooperative program was undertaken in rangeland areas of Oklahoma in 1959. Grasshopper counts in Arkansas were somewhat lower in 1959 than in 1958, and grasshoppers are not expected to be a problem in the State in 1960, other than in a very few local spots. In Texas, infestations of several species did not develop into a general outbreak, only isolated areas reporting damage.

Grasshoppers in Oregon, predominantly red-legged and migratory grasshoppers, were very low, with no economic infestations evident during 1959 in the Willamette Valley. Melanoplus borealis, M. repetinus and Bradynotes sp., near caurus, were discovered in a 10,000-acre rangeland area in northern Baker County in numbers sufficiently heavy to be a potential threat in the spring of 1960. Although damage to range fescue forage was estimated at about 90 percent, discovery was too late for controls to be effective in 1959.

Grasshopper populations in Nevada were far below economic levels and no control programs were carried out during 1959. In Louisiana, differential grasshopper averaged 128 per 100 sweeps in Caddo Parish alfalfa, and in Vermont, populations of red-legged grasshopper were high.

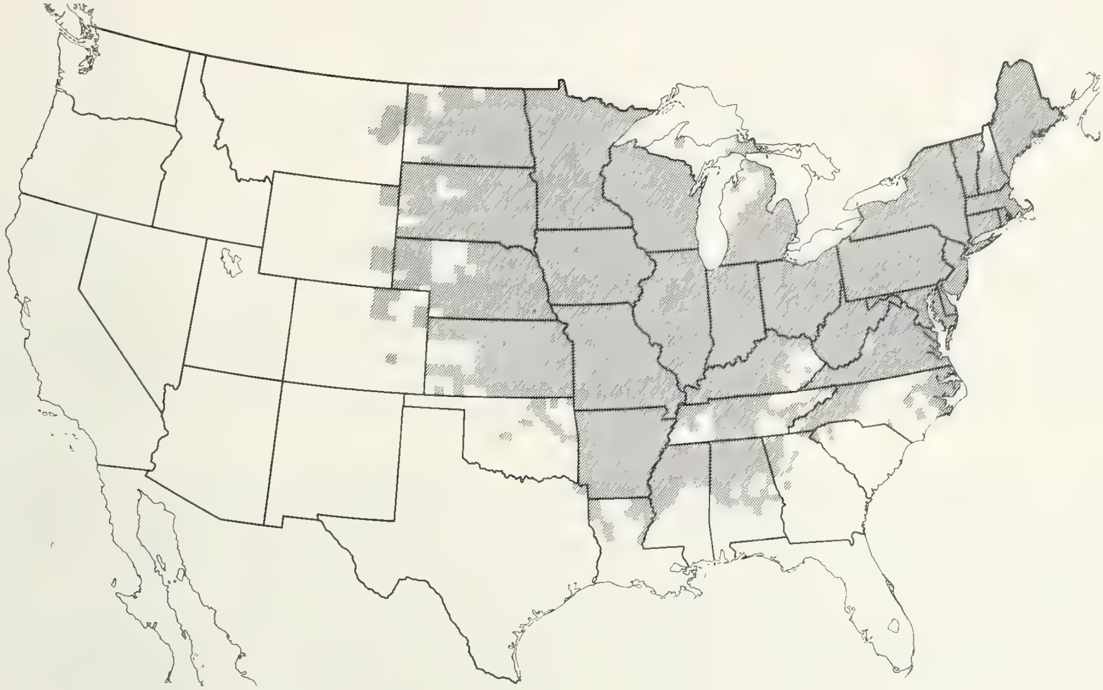


NOTE: This map shows distribution records by counties and does not indicate degree of infestation.

Distribution of Dissosteira longipennis
(Based on 1959 Survey)

MORMON CRICKET (Anabrus simplex) was baited and controlled on 8,542 acres in Utah, the program being carried out as a federally-financed project on lands in San Juan, Daggett and Uintah Counties. Controls were done largely in time to prevent economic losses, protecting at least 85,420 acres. Damage before control was estimated at $10,400 and saving from control at $55,750. Populations of Mormon cricket in Nevada were far below economic levels, with no control programs in 1959. Infestations in Montana were also down, with one infestation being present and controlled in Sanders County.

Corn and Sorghum Insects: The spread of EUROPEAN CORN BORER (Pyrausta nubilalis) was much more limited during 1959 than during 1958. During 1959 only 13 counties in 7 states reported its presence for the first time, compared with 58 counties and parishes in as many states during 1958. The report from Bowie County, Texas, during 1959, was the first record for that State. A distribution map of the species is included below.



Distribution of European Corn Borer

European corn borer damage in North Dakota was generally light except for a few scattered pockets in southeastern counties. The overwintering population, the highest ever recorded in the State, produced a slow-developing first brood. Weather conditions and slow plant development during June hampered egg laying and borer survival. Infestations ranged 0-60 percent by August 7, with an average of 11 percent of plants infested. First-generation pupation in North Dakota ranged 0-40 percent August 19. Weather conditions again interferred with moth flight and egg laying and no economic second generation was produced. Spring surveys in South Dakota indicated winter survival percentages of approximately 82 in northeast, 76 in east central and 70 in southeast areas, for European corn borer. Pupation began the first week of June in the southeast, with a very small amount of emergence by June 19. The first-brood population was light. Second-brood moth emergence occurred in mid-August, with the second-brood population being higher than the first.

Overwintering European corn borer numbers in Minnesota were the lowest in many years, overwintering mortality averaging 27 percent. The first generation in 1959 was low, as expected, except in the southwest district. Only small numbers of second-generation eggs were found; however, the fall abundance survey showed a larger population than expected. In Wisconsin, winter survival ranged from 91 percent in Manitowoc County to 25 percent in a Grant County field, and averaged 69 percent in southern and eastern counties. Parasitism was determined at 20 percent, with Lydella grisescens the principal parasite. First moths were trapped May 30-June 9. First European corn borers were found in Dane and Grant Counties the week of June 19 and third-instar larvae in Rock, Iowa and Grant Counties by July 3. Second-brood moths had emerged by August 7 in Dane County. Corn planting in eastern Nebraska was delayed because of rain during most of May. Pupation of overwintering borers reached 96 percent by the first week in June. Peak European corn borer moth emergence occurred during mid-June, with total flight much less than in 1958. Egg masses averaged 200 or more per 100 plants on corn planted in early May and early corn in the southeastern portion of Nebraska was 70-100 percent infested. Second-brood moths emerged in Nance and Merrick Counties by July 25. Second-brood infestation was light to moderate in southeastern areas. The survey during July in Hall and Cuming Counties revealed 1,785 and 3,066 borers per acre, respectively, less than half that of the 1958 surveys. Damage by European corn borer in Kansas was reduced about one-half in 1959, from that which occurred during 1958.

First European corn borer moth emergence in Missouri was noted in early May in the southeast area. The 1959 larval population was lower than that for the last several years, while the highest first-brood egg mass counts were 75 per 100 stalks compared with over 400 for 1958. The highest percent feeding scars recorded was 65, which is below the level for treatment. Of all European corn borer larvae found in Illinois in late March, 54 percent were still alive. This is lower than the average shown in past years. First-generation populations in the State were light and very few fields required controls. The second generation was heavier than in 1958, however, and treatments were justified in some northern and western corn fields.

The number of European corn borer first-generation moths caught in Tippecanoe County, Indiana, light traps was about the same as in 1958, but infestation in early sweet corn was twice as great in 1959. August and September moth collections were about twice as large in 1959 as in 1958. There were two distinct moth flight periods in 1958, namely May 30-July 2 and July 31-September 3. In 1959, 3 distinct flight periods were apparent; May 24-June 17, July 16-August 13 and August 27-September 30, which appear to indicate 3 generations in Tippecanoe County during 1959. In Lawrence County, Indiana, about 2 times as many European corn borer moths were collected in 1958 as in 1959, and there appeared to be 3 generations each year. Midsummer larval populations of the pest were extremely low in northwestern Ohio, averaging about 1.8 per 100 plants in Van Wert County. This followed a severe winter in which a high larval mortality was indicated.

European corn borer was taken in the remaining 6 uninfested Arkansas counties during 1959, making all 75 counties in the State now infested. As in past years, infestations were more severe in late corn than in early corn. Although infestations of European corn borer continued light in Oklahoma, populations were higher in the Bixby area of Tulsa County than have been noted during the past 5 years. No new county distribution records were noted. European corn borer was noneconomic in Louisiana during 1959, and surveys in parishes not previously recorded as infested were negative.

Overwintering survival of European corn borer in Delaware was 46 percent, or 1.7 borers per infested stalk,which was twice that of 1958. Pupation of overwintering borers began in all areas of the State by the second week of April and was well completed by the first week in May. Abundant adult activity and egg deposition occurred the second and third weeks of May, the first 2 weeks of July and the last week of August and first 2 weeks of September. Infestations were very heavy in field corn, and wheat fields in the Greenwood area of Sussex County were very hard hit. The fall infestation survey showed an all-time high for Delaware, since records were started in 1936. European corn borer damage in New Jersey increased in 1959 over that of 1958 and light trap collections indicated a third brood of moths during August and September. Moderate infestations of European corn borer in the Monmouth area of Maine during July and August caused moderate damage to corn. In Pennsylvania, there was a moderate increase of European corn borer during 1959, compared with 1958.

First-generation damage by European corn borer in Maryland was moderate to heavy to early planted sweet and field corn on the Eastern Shore. The fall survey showed the second highest population on record, the greatest numbers being on the Eastern Shore. Considerable damage to wheat occurred in southern sections of the State. Infestations of the insect were heavy and generally scattered over Virginia in various crops, field and sweet corn and wheat being the most heavily damaged. Infestations were not as heavy in field corn as in 1958. European corn borer infestations in Georgia were less important during 1959 than in 1958. Surveys in previously infested counties revealed only one infestation each in Walker and Chattooga Counties.

The European corn borer 1959 fall abundance survey showed that populations were generally lower in the central portion of the Nation during 1959, decreases being noticeable in Iowa, Kansas, Missouri, Nebraska and North Dakota. Slight decreases were evident in Illinois and South Dakota, but increases, although only slight, were noted in Indiana, Minnesota, Ohio and Wisconsin. Populations in the eastern part of the country were generally up over those of 1958, with Virginia an exception. Substantial increases were noted in Delaware and New Jersey, while populations were only slightly higher in New York, Pennsylvania and West Virginia. For the states reporting, based on comparable districts or counties surveyed, the average number of borers per 100 plants decreased from 106 in 1958 to 99 in 1959. (The figure 99 is a corrected total from the 102 shown in Table 1 of CEIR 10(3):31). A summary of the 1958 and 1959 European corn borer surveys may be found in CEIR 10(3):29-38, January 15, 1960.

CORN EARWORM (Heliothis zea) populations and damage were variable over the Nation, depending upon area and crop involved. Corn earworm was very heavy in Minnesota during 1959, being present on corn earlier than usual; before tassel or ears appeared. Whorl feeding was also general. Moth flights continued into September, causing concern to sweet-corn growers, particularly canners. Market sweet corn in Minnesota had upward to 50 percent of ears infested. The first major corn earworm moth flight recorded in Wisconsin was during the last week of July in Plattesville and other localities. Poor flight conditions prevented the expected buildup of light trap catches in early August, but catches increased late in the month. Infestations were high in late-planted sweet and field corn in Wisconsin, with some sweet-corn acreage being treated for control. In 5 European corn borer districts of the State, 12.3 percent of corn ears was infested or showed earworm damage at time of the fall European corn borer survey.

Corn earworm was very abundant on sweet corn in Illinois but relatively light in field corn. Light trap collections in Tippecanoe County, Indiana, indicated corn earworm moths were 5 times as numerous during 1959 as they were in 1958. A total of 3,636 moths were collected in a single light trap during the period June 12 to September 20, 1959, compared with 752 for the same period in 1958. Peak collections in both years occurred September 4-10; 2,307 moths collected in 1959 and 368 in 1958. Sweet corn silking during early September was very heavily attacked by corn earworm, with 90 percent infested ears. In Lawrence County, Indiana, corn earworm moths were about 2.5 times more abundant in 1959 than in 1958. However, only about one-tenth as many moths were collected as in Tippecanoe County. Fall survey of field corn in Indiana showed a 60-percent increase over 1958, with an average infestation of 28 percent. The heaviest infestations, up to 71 percent, occurred in the southern tier of counties. Corn earworm also severely infested grain sorghum in Indiana, with evidence of damage in most heads examined in Knox County. Corn earworm damage to early sweet corn in central and southern Ohio was slight, but higher than usual in northern counties. Late plantings, in general, over the State experienced extremely high populations of corn earworm, even where usually effective controls were employed. Field corn surveyed at harvest showed an unusually high amount of damage.

From mid-August until early October, grain sorghum in southwest and west central Missouri that still had soft grain was infested with 45-190 corn earworm larvae per 100 heads, the higher infestations being in the tight-headed varieties. From early to mid-June, infestations of corn earworm working in whorls of corn, ranged 2-6 percent in southwest, central and north central areas of Missouri. First and second plantings of sweet corn in the southeast area of the State were extensively damaged. Regardless of timing of controls, materials used or frequency of applications, infestations ranged 10-40 percent. Controls applied to third, fourth and fifth plantings were quite effective, with only 2-10 percent damage. In Arkansas, the use of loose-headed varieties of grain sorghum appears to prevent some damage to that crop by corn earworm. Infestations in corn were general throughout Louisiana, appearing first about mid-May in Acadia and St. Landry Parishes. Infestations on sweet corn ranged 60-85 percent in St. Bernard Parish in May. Larvae of this species averaged 1.5 per head on grain sorghum in Caddo Parish.

Most southern and eastern Nebraska area corn fields were lightly to moderately infested with corn earworm from early July until cold weather. Only an occasional larva was observed on sorghum heads and most damage was light. Corn earworm populations and damage in Kansas were higher during 1959 than for several years. In addition to damaging corn, corn earworm also attacked sorghums to a small degree. Corn earworm built up in corn fields in Oklahoma by early June and infestations continued in corn and late grain sorghums until fall, with no noticeable increase in damage over 1958. Corn earworm infestations severely damaged corn and grain sorghum in all sections of Texas where these crops were grown.

Corn earworm heavily infested field corn throughout New Mexico, while medium to heavy infestations in Arizona attacked young corn and grain sorghum as budworms during May and June. Infestations during the peak period in Arizona ranged 35-100 percent of stalks infested, with 1-4 larvae per stalk. Corn earworm contributed to losses in shelled, ensilage and sweet corn in Colorado, while damage was light to moderate to sweet and field corn in northern Utah, being more damaging in the southern portion of that State. Infestations were light on early market and canning corn in Utah, especially in northern and central areas. Damage by corn earworm to field corn in Nevada continued to be severe and was the limiting factor in production in central and southern areas of that State. Corn earworm damage in Idaho during 1959 was considerably below that of 1958. Checks in late August revealed an average of 25 percent of sweet corn ears infested in the southwestern area of the State, with 60 percent infestation in an occasional field. The pest caused extensive damage to sweet and field corn in eastern and northeastern Oregon areas, with 90-95 percent of ears infested in fields examined. Corn earworm adults appeared in light traps in Salem July 3 and in the Dayton area the week of August 24. More damage was noted on sweet corn in the Corvallis area of Oregon than in past years. Based on seventeen 100-ear samples taken near Dayton, 37 percent of sweet corn ears contained larvae. Corn earworm infestations were general in corn over California, with some areas developing heavy infestations.

Corn earworm infestations in field corn in Delaware were rather heavy, being most abundant during late July and August, especially in Sussex County where injury was the most severe. In Maryland, numbers were about normal in early and late corn. The pest heavily damaged sorghum and field and sweet corn in Virginia, infestations being heavier than in the past 5 years. Damage to field and sweet corn and sorghum was somewhat higher than usual. Corn earworm was a problem on sweet corn in Georgia, but controls were successful in most areas.

ARMYWORMS in general were no problem during 1959 on corn and sorghum. FALL ARMYWORM (Laphygma frugiperda) first appeared in Maryland late in July; thereafter, infestations were generally spotty in late field and sweet corn. However, treatment was required on some late sweet corn on the Upper Shore. Outbreaks of this pest occurred in corn, millet and grain sorghum in one or more of 9 Virginia counties. Fall armyworm was of little economic importance in Indiana and was very scarce throughout the season in Illinois during 1959. Light trap catches were low in Indiana and there was little or no infestation of field corn. However, late home garden sweet corn in Tippecanoe County was severely infested.

Fall armyworm infestations developed on late-planted corn in a few areas of Kansas, but were generally noneconomic. This pest appeared in corn fields in the Stillwater area of Oklahoma in early July and populations over the State were generally lighter than they were in 1958. Only a limited number of damaging infestations occurred on a variety of hosts during late summer and fall. Populations were heavy on corn and grain sorghum in Texas, while the use of loose-headed varieties of grain sorghum in Arkansas appears to prevent some larval damage to this crop. Fall armyworm infestations were a problem in Georgia, but controls were successful in most instances. In Florida, fall armyworm and BEET ARMYWORM (Spodoptera exigua)* infested about 40 acres of corn in the Zellwood area of Orange County, the first-named pest feeding on the silk, shuck and kernels and the latter one on the silk. Fall armyworm damaged about 30 percent of the stalks examined in a corn field near Crowley, Louisiana, and, with beet armyworm, caused considerable damage to a young field of corn in Bossier Parish in July. Eighteen percent of grain sorghum plants examined in a field in East Baton Rouge Parish was damaged by fall armyworm.

ARMYWORM (Pseudaletia unipuncta) was not generally a problem on corn in 1959. Infestations were light in corn over Delaware during June and spring populations were light in Maryland, although a moderate outbreak occurred in late corn in the southern area and on the Eastern Shore during August. Field corn, millet and sorghum were heavily damaged in several counties in Virginia, there being a spring outbreak and a late summer or fall outbreak.

Several species of CUTWORMS were more than normally destructive to young corn in all sections of Maryland and several species were common in Indiana during the spring, with significant losses reported to corn. Larvae attacked corn in scattered locations of Bottineau and Pierce Counties, North Dakota, with severe damage in infested fields. Larvae averaged 4-5 per linear foot in some fields. Cutworms were reported in the light soil of central Wisconsin by May 28 and necessitated the replanting of 3,000 acres of corn in the southern part of the State. Lowered plant populations were observed in many fields planted on spring-planted sod.

BLACK CUTWORM (Agrotis ipsilon)** was extremely abundant and destructive in many areas of Illinois, destroying thousands of acres of corn with much replanting necessary. Some fields were replanted 2-3 times. Controls were applied to thousands of acres. Black cutworm was the principal species of cutworm on corn in Indiana, being reported from many sections. Corn planted directly in newly plowed clover fields was the most seriously damaged and control in early cultivated corn was relatively difficult. Corn seedlings were damaged in several north central Ohio fields, necessitating considerable replanting. Black cutworm caused unusually late and severe damage in localized areas of southeastern Nebraska counties, mostly to corn, with damage causing 10-70 percent reduction in stands. This pest was abundant on sweet corn in the Willamette Valley of Oregon, requiring control measures about June 12. Scattered, light infestations also occurred on corn throughout Missouri, with most damage appearing in northeast and north central areas. Black cutworm was more than normally destructive to young corn in all sections of Maryland.

DINGY CUTWORM (Feltia subgothica) and VARIEGATED CUTWORM (Peridroma margaritosa) occurred in scattered, light infestations in corn throughout Missouri, with most damage in the northeast and north central areas of the State. In late May, variegated cutworm larvae, migrating from alfalfa, red clover and grassy areas, caused severe injury to marginal rows of corn in Missouri; and moth emergence was high in the southeast in early June. Variegated cutworm was more destructive to young corn in all sections of Maryland than normally.

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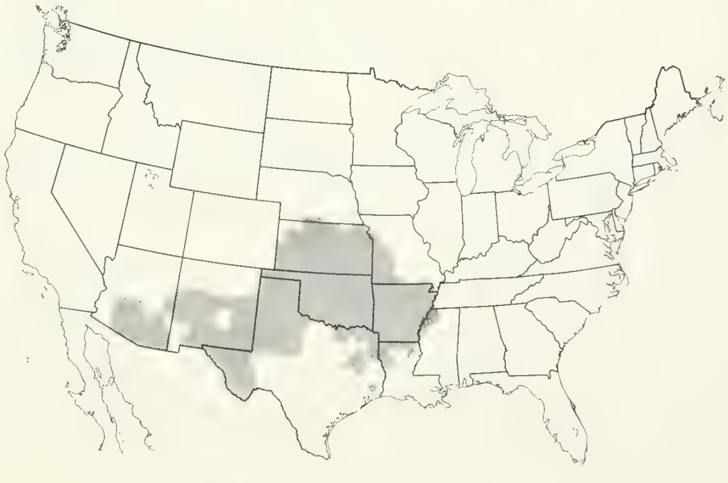
* Zimmerman, E. C. 1958. Insects of Hawaii, Vol. 7:339.
**Zimmerman, E. C. 1958. Insects of Hawaii, Vol. 7:253.

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) continues to be an important factor in corn production in Arkansas and is one of the reasons for the decrease in corn acreage in the State. Winter survival studies in the northwest area showed a variation of infestation of 2.5 percent, with an average of 18 percent. The infestation was very light in early corn but severe in late corn. With this same situation of severe infestation in late corn in regard to European corn borer as well as southwestern corn borer, and in most years with fall armyworm, it has become impractical to grow late corn in Arkansas. In Missouri, a brief check of one southwest area corn field in mid-March showed 30 percent of southwestern corn borer larvae overwintering successfully. Percent of girdled stalks found during the fall survey was higher than in 1958. An average of 8 extreme southwest counties showed 11.3 percent girdled stalks compared with 6.3 percent in 1958. Southwestern corn borer was collected in Mississippi for the first time in 1959, being identified from adults that were reared from pupae taken in corn in Coahoma County during May. The pest was also recorded in Bolivar, Tunica, Panola, Tate, Quitman and De Soto Counties, Mississippi, by the end of the year.

Southwestern corn borer numbers in Kansas were generally low during 1959. Mortality of overwintering larvae was 13 percent in the Stillwater area of Oklahoma. Surviving larvae began pupating by early May and emerging by middle and late May in the same area. First-generation larvae pupated from late June into July. Surveys showed light infestations in early planted corn and medium to heavy counts in late-planted corn in the central and east central areas of Oklahoma. Infestations of southwestern corn borer ran as high as 100 percent on corn in the north and south plains areas of Texas, with some damage to grain sorghum. Lighter infestations were noted in other areas of the State. In Louisiana, infestations of first-generation southwestern corn borer larvae were very light; but numbers increased considerably, later. This was probably due to a concentration of populations brought about by a large reduction in acreage planted to late corn. Southwestern corn borer was found in Richland Parish, Louisiana, for the first time during 1959.

Survey of corn and sorghum fields in Dona Ana, Luna, Quay, Curry and Roosevelt Counties, New Mexico, showed most corn stalks heavily infested with southwestern corn borer while very few sorghum stalks were infested, except for one Curry County field in which infestation was moderately heavy. Light trap data in Arizona indicates peak of moth emergence from overwintered southwestern corn borer larvae occurred during April in the central area of that State, followed by heavy infestations in corn and grain sorghum throughout the summer. Counts ranged 20-90 percent of stalks infested with one or more larvae per stalk. The pest did not occur in Arizona west of Gila Bend in western Maricopa County. The distribution of Southwestern corn borer in the United States is shown below.



Distribution of Southwestern Corn Borer

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) infestations were reported in the southern Coastal Plain of North Carolina and complete loss of two acres of corn following corn occurred in Robeson County. Populations of SUGARCANE BORER (D. saccharalis) were extremely heavy in late grain sorghum in the Brazos River area of Texas, with lesser damage noted to corn and grain sorghum in the upper coastal and south central areas. Early damage to corn in the sugarcane belt of Louisiana by sugarcane borer was exceptionally light in 1959 compared with 1958, except in some fields in St. Mary Parish. By fall, however, much damage was observed in Acadia, East Baton Rouge and Grant Parishes.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) infestations in Arizona began increasing in late May in young corn and sorghum where seed was planted without treatment. Late plantings were heavily infested in some cases, particularly in central and southwestern areas of the State. This pest severely damaged a field of grain sorghum in East Baton Rouge Parish, Louisiana, damage being estimated at approximately 20 percent. Lesser cornstalk borer infestations were light to heavy in Georgia in 1959, but generally not as serious as in other years.

STALK BORER (Papaipema nebris) populations increased slightly in southeastern Nebraska, with only light damage; and the species was higher than usual in Kansas during 1959, with heavy damage to corn only in a few localized areas. This pest injured marginal rows of corn in southwestern Missouri in early June and larvae damaged early corn in Indiana, especially along weedy fence rows. Occurrence was general over southern, western and northern Indiana counties. Stalk borer was present but light in Minnesota, damage to corn being confined to field margins. Larvae of this species were present in all Delaware counties during June and injury was very slight and noneconomic. In Maine, light to moderate damage, probably caused by stalk borer, occurred in a few Aroostook County gardens during June; but damage was generally less than usual. Severe damage also occurred to corn in one field taken out of sodland.

CORN ROOT WEBWORM (Crambus caliginosellus) heavily attacked roots of young corn in one field in New Castle County, Delaware, during early June. Large areas of the field required replanting due to destruction. Larvae of a NOCTUID (Simyra henrici) were found feeding in corn fields in many areas of Illinois, but populations were low and caused no serious damage. A PYRAUSTID (Nomophila noctuella) was economically important on corn planted in fields following sod in many areas of Indiana.

SORGHUM WEBWORM (Celama sorghiella) caused considerable damage to grain sorghum throughout Missouri and was more important in Kansas during 1959 than usual. Populations were extremely heavy in many areas of Texas, while infestations of this pest were considerably higher over the eastern two-thirds of Oklahoma than in 1958. Sorghum webworm was not as abundant in Indiana as in 1958, due principally to better growing conditions and more uniform plant development. One 40-acre field of late sorghum in Posey County, Indiana, averaged 80 percent of heads infested with 5-6 larvae per head, and adults were collected in Daviess County in mid-September.

Sorghum webworm caused considerable damage to late-maturing grain sorghum in southeastern Kansas. First specimens were noted in western Missouri counties in late July and damage began in early September in western counties of that State on sorghum that was blooming. In mid-September, counts in the central area averaged 700 larvae per 100 heads, while in the extreme northeast section some heads in fields were completely devoid of grain. In early October, larvae were still feeding in very late-planted sorghum and ranged 40-1200 per 100 heads in southwest and 20-90 in southeastern Missouri. Sorghum webworm populations in Oklahoma began building up in mid-August, averaging up to 250 larvae per head in some southeastern and south central fields by late September. Complete loss of grain was reported in some fields in several areas in the eastern two-thirds of Oklahoma. The use of loose-headed varieties of grain sorghum in Arkansas appears to prevent some damage to this crop by sorghum webworm.

CORN ROOTWORMS (Diabrotica spp.) apparently are becoming more important in corn each year in several corn-producing states. Injury to corn in Nebraska by SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi), WESTERN CORN ROOTWORM (D. virgifera) and NORTHERN CORN ROOTWORM (D. longicornis) is becoming increasingly important, with fields in certain areas showing more damage from this group than from European corn borer. In Minnesota, the cropping system of corn following corn has led to more problems from Diabrotica spp. each year, damage being quite evident during 1959. Awareness of this group has increased in this State with the result that more corn acreage is receiving soil treatment each year. Based on county agents reports, the 1959 treated acreage in Minnesota was more than double that of 1958. Surveys in May in Wisconsin revealed injury to corn and counts in Rock County averaged 25 larvae per corn plant and 12-13 per plant in Columbia County.

Adults of southern corn rootworm were abundant in many corn fields over Illinois, being exceptionally abundant in the Champaign-Urbana area. Northern corn rootworm was very abundant over the State in the same crop, and both species caused more damage to corn than for the past several years. Both northern and southern corn rootworms were numerous during July and August in Indiana, with some scattered reports of root injury to corn. A few northern and western corn rootworms appeared in South Dakota in late July, but numbers were noneconomic. Adults of southern corn rootworm averaged one per corn plant in Union County, in the southeast area of the State.

Northern corn rootworm adults were observed in grain sorghum heads during August in the northern portion of Missouri, with heavier counts ranging 2-9 per head. Larval damage was noted on corn in the east central portion of the State in early June, with counts of 3-12 larvae per stalk in one field. Counts of adults feeding on silks of late corn in northern areas of Missouri, in August, ranged 3-6 per ear. Northern corn rootworn was also serious in corn on about 5,000 to 10,000 acres in Humphreys County, Tennessee, in August. Southern corn rootworm caused some damage to young corn in April in Tangipahoa and Livingston Parishes, Louisiana.

Western corn rootworm was more numerous in corn fields in Kansas during 1959 than for the past 4 years, and contributed to losses in shelled and ensilage corn in Colorado. Western corn rootworm was reported for the first time from Montana during 1959, being found in Yellowstone County, severely damaging corn.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) was reported in the roots of sweet corn plantings in Polk County, Oregon.

Unspecified species of BILLBUGS caused light damage to corn throughout Illinois and some heavy damage in the southwest section where 60 percent of plants were damaged in some fields. A few corn fields along the Missouri River bottoms in the central area of Missouri were reported to have 85-95 percent of the stand damaged by Calendra spp. in early May. Calendra spp. also injured corn in many southern Coastal Plain fields in North Carolina, some requiring replanting. Infestations of C. callosa were general on corn in the southern section of Georgia and some farmers had to replant 3 times due to injury.

CORN FLEA BEETLE (Chaetocnema pulicaria) was more abundant in Illinois than in 1958, especially in the southern part of the State where as many as 25 adults per plant occurred in 1959, compared with a high of 6 per plant in 1958. Seedling corn in southwestern Missouri was damaged by populations of 2-6 adults per plant and second-generation adults continued very numerous during late summer in the same area. Incidence of Stewart's disease was very high in the flea beetle area. Northern area populations were very light in Missouri.

Corn flea beetle was present in nearly all corn fields in the eastern half of Kansas; however, damage occurred in only a few areas. Damaging infestations were reported in scattered corn fields in north central, central and south central Oklahoma during May and early June. Corn flea beetle again damaged sweet corn throughout Washington County, Utah, with some damage occurring in other counties, including a few spots farther North.

Corn flea beetle was less numerous than usual on corn in New Jersey and adults were first noted on young corn in Delaware in mid-May, remaining common in that State throughout the season but apparently causing only light feeding injury.

Medium to heavy infestations of DESERT CORN FLEA BEETLE (Chaetocnema ectypa) occurred in young corn and sorghum in the central area of Arizona during late March, continuing through the spring. Damage in most cases was not heavy. WESTERN BLACK FLEA BEETLE (Phyllotreta pusilla) infestations damaged sweet corn in the Winter Garden area of Texas during 1959.

Adults of DUSKY SAP BEETLE (Carpophilus lugubris) were first encountered in Delaware the first of June in early corn infested with European corn borer and were common to abundant on sweet corn in Kent County, causing fairly heavy injury during the latter part of the month. By mid-July and through most of August, adults and larvae of this beetle were very common in most infested ears. Dusky sap beetle caused slight damage to canning and market corn in isolated areas of Illinois and conspicuously small numbers were found wherever sweet corn records were taken throughout the season in Ohio. This pest caused local injury to sweet corn in Utah as far north as Salt Lake and Utah Counties, mostly in home gardens, damage being greatest in the southern part of the State. In Washington, sweet corn ears in the Yakima Valley were infested with up to 10 larvae of C. lugubris per ear during the last half of July. Unspecified species of SAP BEETLES were abundant in ears of sweet corn in Maryland during most of the season.

SEED-CORN BEETLE (Agonderus lecontei) severely damaged corn in a few north central areas of Kansas, especially where seed was not treated; and surveys in Wisconsin during May showed some injury to corn, due to this pest.

A WEEVIL (Anacentrinus deplanatus) occurred in damaging numbers on grain sorghum in the central area of Texas during 1959. Another WEEVIL (Hyperodes humilis) was collected in all stages on sweet corn in Palm Beach County, Florida, during the period February 12-16. Approximately 50 percent of all corn fields in the area were infested and infestations were close to 100 percent of all plants in infested fields. Serious damage occurred to plants 1-2 feet high. Although previously collected in Florida, this species has not been recorded as of economic importance. Centrinaspis penicellus, also a weevil, was reported for the first time from Connecticut, having been taken in corn in New Haven County in August 1958.

SAND WIREWORM (Horistonotus uhlerii) damaged corn in Missouri in southeast area sandy fields in late June and WHEAT WIREWORM (Agriotes mancus) was reported to have caused severe damage to corn fields in Rutland County, Vermont. Unspecified species of WIREWORMS were destructive to corn in eastern Wicomico County, Maryland, and injured corn in Wisconsin in May. Wireworms were not important in Indiana during 1959 because of a low point in population cycles and the increased number of treated corn fields. These pests were present in corn fields in many parts of Illinois and caused considerable damage, with 180 larvae per 100 plants being reported in one field. In late May, stands in some corn fields in southwestern Missouri were reduced 2-6 percent by Melanotus spp., and in early June, damage was evident in fields scattered through the northern half of the State. Infestations of undetermined wireworms injuring corn were reported from Griggs, Towner, Pierce and Cavalier Counties, North Dakota, with crop damage being extensive in Pierce County. About 90 acres of redtop sorghum were destroyed in San Miguel County, New Mexico.

JAPANESE BEETLE (Popillia japonica) was of minor importance on corn in a few areas of Virginia during 1959 and corn in Wisconsin was injured by unspecified species of WHITE GRUBS during May. Adults of a BEETLE (Colaspis sp.) caused severe damage to corn in the southern half of Illinois, with as many as 80 percent of the plants reported damaged in some fields, and up to 2,300 larvae per 100 plants also reported. Adults of Colaspis sp. also injured corn in Hyde County, North Carolina, and were unusually abundant throughout the Coastal Plain of that State.

CHINCH BUG (Blissus leucopterus) was widespread in corn in Hyde County, North Carolina, in early May and in Warren County in late June. In Hyde County, 20 percent of young corn plants were infested and 2-5 percent had buds killed. This pest was relatively scarce in Illinois corn fields, with very little damage; but the pest damaged grain sorghum in a few localities in Kansas. Chinch bug began migrating from small grain to small corn and grain sorghum in Missouri in late June and early July. Some fields next to small grain in the southwest area of the State were completely taken out.

As expected, damaging infestations of chinch bug occurred in newly planted corn fields in scattered localities of nort central, central and south central Oklahoma during May and early June. Outbreaks occurred only in those counties rated as moderate, severe or very severe in the 1958 hibernation survey.

Although large numbers of adults and nymphs of a FALSE CHINCH BUG (Nysius raphanus) were often found in alfalfa fields along fence rows in New Mexico in early summer and in the fall, there was no buildup or damage to grain sorghums as occurred in 1958. Several species of STINK BUGS,including SOUTHERN GREEN STINK BUG (Nezara viridula), BROWN STINK BUG (Euschistus servus) and another stink bug (E. ictericus), caused considerable damage to young corn in Caddo Parish, Louisiana, and in southern portions of that State, particularly where corn was interplanted with soybeans.

With respect to CORN LEAF APHID (Rhopalosiphum maidis), 1959 was the worst year ever experienced in Ohio from the standpoint of grower concern; and in Indiana infestations were the heaviest recorded in recent years. The species was extremely abundant in Illinois and caused much concern to corn growers in that State. Populations in Ohio were high in corn and generally distributed over the 20 counties in the northwestern quarter of the State. Actual losses in Ohio were not as high as anticipated from the magnitude of infestation, more seriously affected fields seldom exceeding more than 15-20 percent loss. Feeding was minimized in areas receiving adequate rainfall.

In Indiana, nubbins and barrenness were extensive, with greatest losses to corn by corn leaf aphid in the northern tier of counties and through the north central portion of the State. Infestations of this pest averaged 36-80 percent in these regions and loss averaged 4.5 percent in the northern one-fourth of the State, 11.2 percent in the next fourth, followed by 3.3 percent, with no measurable loss in the south fourth. In Illinois, it was very common to find 10-20 percent of plants infested with corn leaf aphid in early and midseason corn; and 10 percent of corn plants were infested in some late corn.

Populations of corn leaf aphid were high in Minnesota corn in 1959 as they were in 1958, apparently causing incomplete pollination or kernel set in many areas. However, high temperatures and drought may have been responsible. Predator populations were high in that State, but did not exert much control until late in the season. Small colonies of corn leaf aphid were present on corn in southwestern Wisconsin counties July 7, approximately 2 weeks earlier than in 1958. Aphids became numerous in many sections, but populations varied considerably. By August 7, populations began to decline in corn fields in the southern section of Wisconsin.

An unusually high corn leaf aphid population occurred on North Dakota corn, although no particular injury was observed; and populations were very high on corn in many areas of South Dakota through August, with little damage noted. The species was first noted the third week of July on sorghum in this same State. Low numbers of corn leaf aphid were detected in southeastern Nebraska corn fields in mid-July. A buildup occurred in this same area during mid-August, with only moderate damage, although 10-40 percent of the plants were infested. Light to medium corn leaf aphid infestations were common in corn and grain sorghum fields throughout Oklahoma from May to late October. Usual numbers of this pest were present in Kansas but no severe damage was noted to corn and sorghum in the State.

Corn leaf aphid infested 10-85 percent of grain sorghum throughout Missouri in mid-July. Infestations were moderate in southwest area corn in late June; but in early to mid-July 10-40 percent of north central and northwest area corn plants were infested with this pest, which also caused considerable damage to grain sorghum in north central, south central and southwest areas of Texas.

Corn leaf aphid injury to corn in Utah was very light during 1959; but heavy corn leaf aphid infestations occurred on corn in Dona Ana County, New Mexico, during August. In Arizona, heavy infestations moved into grain sorghum as it came up in late April, but were gradually reduced as temperatures increased. However, infestations increased statewide in older sorghum in late August in Arizona and were extremely heavy by September 15, continuing until late harvest. RUSTY PLUM APHID (Hysteroneura setariae) also became heavy in grain sorghum in Arizona in early September and continued heavy through October, when heavy flights were a problem in cities and towns.

Colonies of corn leaf aphid became abundant on corn tassels and whorls in Delaware during late July, continuing to increase for 3-4 weeks. Populations were markedly decreased in September and remained low on corn most of the season. Populations of corn leaf aphid in Maryland were generally lighter than they were in 1957 and 1958.

APPLE GRAIN APHID (Rhopalosiphum fitchii) and GREEN PEACH APHID (Myzus persicae) were found attacking field corn in the upper Columbia Basin area of Washington by September, while apple grain aphid and other species were collected in fewer numbers on sweet corn and watergrass. Heavy populations of apple grain aphid developed on milo in the Le Grande area of Merced County, California. CORN ROOT APHID (Anuraphis maidi-radicis) was found in 55.5 percent of northwestern Illinois corn fields in mid-June. Infestations ranged light to heavy; 14 percent of fields in the western part of the State were lightly infested in early July.

Heavy infestations of SORGHUM MIDGE (Contarinia sorghicola) occurred on grain sorghum in the south central, upper coastal and eastern areas of Texas; while populations of this pest in Oklahoma dropped far below the 1958 counts, with none to very light damage being noted during 1959. Sorghum midge is the most serious pest of grain sorghum in Arkansas, but early planted crops generally escaped damage in 1959. This species appeared to be one of the most damaging insects to grain sorghum in Louisiana in the spring of 1959, with heavy populations observed in Caddo and Bossier Parishes. One Louisiana field sustained losses of approximately 50 percent by July.

SEED-CORN MAGGOT (Hylemya cilicrura) injury to corn in Utah was moderate to locally severe, while in Wisconsin some injury to corn was revealed by surveys conducted in May. Seed-corn maggot adults were killed in all sections of Maryland by a fungus during the spring, while large numbers of adults were also killed by a fungus disease in the Columbia Basin of Washington during June. CORN BLOTCH LEAF MINER (Agromyza parvicornis) was very active in Delaware, particularly in July and August, when it was common in most areas of the State.

Reported damage by SPIDER MITES was somewhat limited during 1959. Unspecified species caused late damage to corn fields in the south central portion of Montana, while *Tetranychus* spp. and *Oligonychus* spp. caused light to moderate damage to lower leaves of corn in localized areas of two counties in western and northeastern areas of Nebraska. TWO-SPOTTED SPIDER MITE (*Tetranychus telarius*) caused the major loss to shelled corn in Colorado, also infesting ensilage and sweet corn in that State. Damage to corn by this pest was severe in parts of Davis and Weber Counties, Utah, and scattered in other counties of the State. DATE MITE (*Oligonychus pratensis*) damaged corn and grain sorghums in Dona Ana, Eddy, Torrance and Valencia Counties, New Mexico; and *O. stickneyi* heavily infested corn in home gardens in Las Cruces, Dona Ana County.

GRASS THRIPS (*Anaphothrips obscurus*) was very abundant on corn throughout Illinois, causing much concern to corn growers, especially in the south. A severe infestation of unspecified species of THRIPS occurred on late-planted corn in Clay County, Indiana, in late May and early June, with counts on leaves of corn 8-12 inches tall averaging 75-150 per leaf. Infested corn lacked glossy leaf appearance and was grayish-green in color. Leaves were flaccid to the touch. Several hundred acres were treated, but locally heavy rains also reduced populations and plants made normal recovery and outgrew injury. Undetermined species of thrips damaged a few fields of small grain sorghum in the west central area of Missouri in June, while moderate to heavy infestations caused temporary shriveling of corn tops in southeastern counties of Nebraska during mid-July. In Maryland, undetermined species of thrips were abundant on corn during the summer.

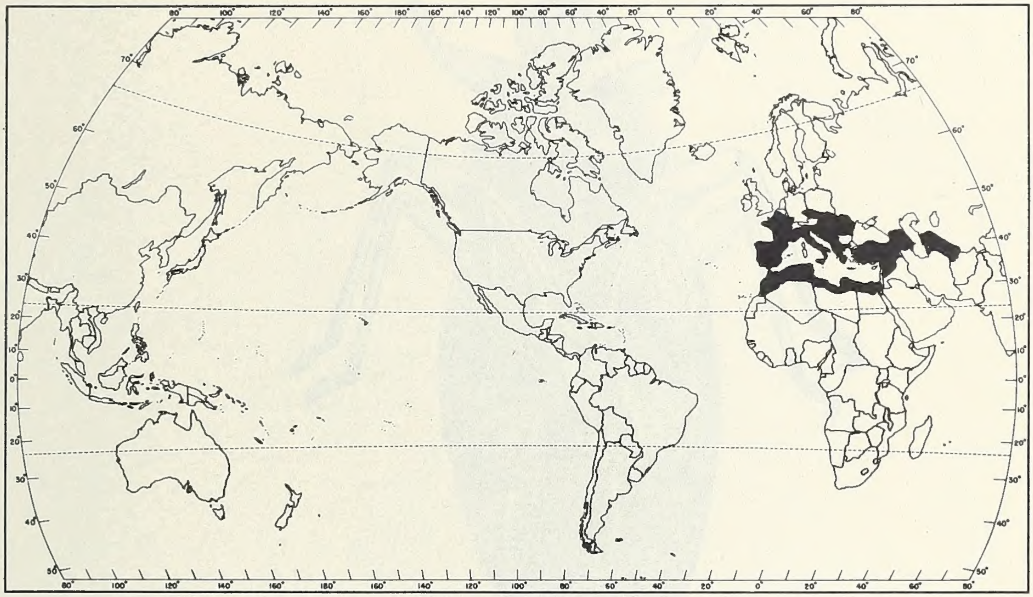
EUROPEAN EARWIG (*Forficula auricularia*) heavily infested corn in Payette County, Idaho, during July; and was heavier than normal on plants in Baker, Wallowa and Grant Counties, Oregon, and was especially noted damaging corn in August.

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

ALMOND BUG (Monosteira unicostata Muls. & Rey.)

Economic Importance: This tingid causes damage to apple and pear in North Africa. It is also injurious to almonds, apricots, cherries, pears and plums in Italy and Spain. Feeding causes yellow spotting of leaves and in heavy infestations the foliage becomes coated with excreta. Severe attacks lead to defoliation, heavy losses of crop, and abnormal second growth. Monosteira unicostata has been intercepted occasionally at U. S. ports of entry.

Distribution: Recorded in Albania, Czechoslovakia, Cyprus, France, Greece, Hungary, Italy (including Sicily), Portugal, Spain, Romania, Turkey, United Arab Republic (Syria), U.S.S.R. (Caucasus, Turkestan), Yugoslavia and North Africa.



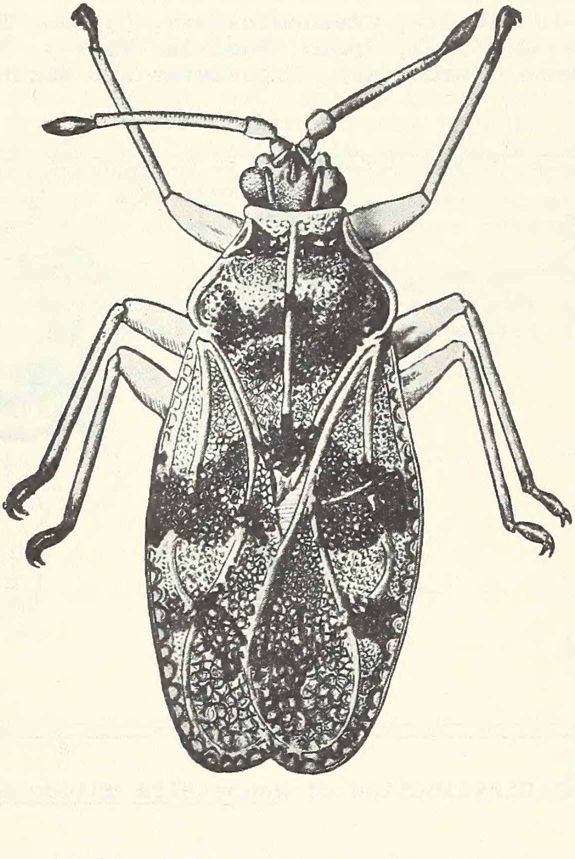
General Distribution of Monosteira unicostata

Hosts: Almond, apricot, cherry, pear, apple, plum, peach, hawthorn, willow and poplar.

Life History and Habits: Adults overwinter in cracks in tree trunks or in debris in the soil. Eggs are inserted into the leaf tissue along the veins on the underside of the leaves. The eggs hatch in 13-15 days. The nymphs undergo 5 molts and complete development in 25-30 days. There are as many as 3 or 4 generations annually with considerable overlapping late in the season so that all stages may be found at one time. Injury is reported to be more serious in late summer.

(Tingidae, Hemiptera)

Description: ADULT 2-2.5 mm. head to tip of wings which extend pass tip of abdomen. General form oval. Color brownish-yellow marked transversally with dull-brown and black spots. (see illustration). Lower part of thorax black; underside of abdomen, brownish-red. Uppersurface of pronotum coarsely punctate. Head small, reddish eyes prominent, brown-red. Head has 3 frontal spinose protuberances arranged in a triangle. Occiput has two diverging spines which are longer than those on the fore part of the head and directed forward. Antenna has 4 segments: the two basilar are short and swollen, the third slender and several times longer than wide, the last fusiform and sharp-pointed. Legs pale-yellow with extremities of tibiae and tarsi darker. Male easily distinguished from female by presence of intercrossing parameres at extremity of abdomen. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(12):3-18-60.



Adult of Monosteira unicostata

Major reference and figure (except map) from: Bremond, P. 1938. Rev. de Path. Veget. et D'Ent. Agr. 25(4):294-307.

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